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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/859,501	05/18/2001	Yoshihisa Soeda	208707US-2	5037

22850 7590 03/17/2006

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EXAMINER	
THOMPSON, JAMES A	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/859,501	SOEDA ET AL.	
	Examiner	Art Unit	
	James A. Thompson	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 20 December 2005.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 18 May 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 20 December 2005 have been fully considered but they are not persuasive. While Examiner agrees with Applicant that presently amended claims 1-4, 9-14 and 19-20 are not taught by the combination of Tamura (US Patent 5,943,141), Ito (US Patent 5,442,464), and Yamamoto (US Patent 5,111,131), additional prior art has been discovered which does render claims 1-4, 9-14 and 19-20 obvious to one of ordinary skill in the art at the time of the invention. Furthermore, although claims 5-8 and 15-18 have previously been noted as containing allowable subject matter, it has been discovered that the newly applied prior art also renders claims 5-8 and 15-18 obvious to one of ordinary skill in the art at the time of the invention.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-2, 5-8, 11-12 and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US Patent 5,371,613).

Regarding claims 1 and 11: Orito discloses an image reading device (figure 5 of Orito) comprising a photoelectric device (figure 5(54) of Orito) including a plurality of pixels (column 5, lines 48-52 of Orito) and provided with an empty transfer part (column 5, lines 52-58 of Orito); an A-D converter (figure 5(61) of Orito) performing A-D conversion on an output signal for each pixel of said photoelectric device (column 6, lines 20-26 of Orito); a reference voltage varying part (figure 5(70(portion)) of Orito) varying a reference voltage of said A-D converter (column 6, lines 20-26 of Orito) to vary between first (column 5, lines 58-62 of Orito), second (column 5, lines 52-55 of Orito) and third (column 5, lines 55-58 of Orito) reference voltages based on a current mode of an image scanner (column 5, lines 52-62 of Orito), the first reference voltage selected for a background removal function (column 5, lines 58-62 and column 9, lines 39-45 of Orito), and one of the second and third reference voltages being selected when the background removal function is not used (column 5, lines 52-58 of Orito). Three separate reference levels are selected between. A first reference level is for reading image data (column 5, lines 58-62 of Orito), which includes the function of background removal (column 9, lines 39-45 of Orito). By subtracting the black average values from the image data (GD(n)-B(n)) (column 9, lines 39-45 of Orito), the background level is removed. If image data is not read, then either white level data or black level data are determined (column 5, lines 52-58 of Orito). Since all image data read by the photoelectric device are specifically converted to voltages (column 6, lines 20-26 of Orito), the first, second and third reference levels are reference voltages. Furthermore, since the white level data and black level data are

determined without respect to background removal (column 7, lines 50-58 and column 8, lines 5-11 of Orito), different reference voltages are used for white level data reading, black level data reading, and image data reading.

Orito further discloses a detecting part (figure 5(70 (portion)) of Orito) detecting a black correction reference data from an output signal for each pixel of said photoelectric device (column 8, lines 5-11 of Orito); a black shading correcting part (figure 5(70(portion)) of Orito) subtracting the black correction reference data (B(n)) from digital image data (GD(n)) obtained from the output signal for each pixel of said photoelectric device when an image is read (column 9, lines 39-45 of Orito), through said A-D converter having the reference level set therein (column 6, lines 20-26 of Orito); and a correcting part (figure 5(70(portion)) of Orito) correcting the black correction reference data by a relation between a first digital black level value (1BA*n*) obtained from an output voltage level of said empty transfer part (column 5, lines 52-58 of Orito) obtained through said A-D converter (column 6, lines 20-26 of Orito) when the black correction reference data is detected (column 8, line 64 to column 9, line 7 of Orito) and a second digital black level value (2BA*n*) obtained from an output voltage level of said empty transfer part (column 5, lines 52-58 of Orito) obtained through said A-D converter (column 6, lines 20-26 of Orito) also when said black correction reference is detected (column 8, line 64 to column 9, line 7 of Orito).

Orito teaches that a control unit (figure 5(70) of Orito) is used to control the scanner (column 5, line 65 to column 6, line 5 of Orito). Thus, the reference voltage varying part, detecting part, black shading correcting part, and correcting

part are the portions of the physically-embodied software, executed by the CPU (figure 5(71) of Orito) which forms a portion of the control unit, which perform the functions of the reference voltage varying part, detecting part, black shading correcting part, and correcting part, respectively.

Orito does not disclose expressly that said relation between said first digital black level value and said second digital black level value is a ratio; and that said second digital black level value is obtained when the image is read.

Arimoto discloses correcting reference data (Wave') by a ratio (column 9, lines 21-25 of Arimoto) between a first digital level (Pave) obtained when the reference data is detected (column 7, lines 8-12 of Arimoto) and a second digital level (Wave) obtained when the image is read (column 7, lines 4-7 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of background and black level reference data in digital image scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a ratio as the relation between two digital level values, wherein the second one is taken from data obtained during an image read operation, as taught by Arimoto, wherein the two digital level values are the first digital black level and the second digital black level taught by Orito. The motivation for doing so would have been that the originally installed reference regions deteriorate over time (column 2, lines 13-21 of Arimoto), and applying the correction taught by Arimoto eliminates this problem and allows for convenient automatic compensation for density changes in the reference level producing regions (column 2, lines 24-29 of

Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 1 and 11.

Regarding claims 2 and 12: Orito discloses an image reading device (figure 5 of Orito) comprising a photoelectric device (figure 5(54) of Orito) including a plurality of pixels (column 5, lines 48-52 of Orito) and an empty transfer part (figure 4(51) and column 5, lines 52-58 of Orito); an empty transfer part output generating part (figure 5(70(portion)) of Orito) falsely generating an output of the empty transfer part of said photoelectric device by outputting a predetermined voltage at a predetermined timing (column 5, lines 52-58 of Orito). The white level data and black level data produced by the empty transfer part output generating part are clearly false outputs since said white level data and black level data are used to calibrate the scanner, and are not image data outputs. Since the white level data and black level data are produced at specific pixel locations (column 5, lines 52-58 of Orito), then the white level data and black level data are produced at a predetermined timing, namely the timing corresponding to when the CCDs of the image sensor are located at the positions in which the white level data and black level data are read.

Orito further discloses an A-D converter (figure 5(61) of Orito) performing A-D conversion on an output signal for each pixel of said photoelectric device (column 6, lines 20-26 of Orito); a reference voltage varying part (figure 5(70(portion)) of Orito) varying a reference voltage of said A-D converter (column 6, lines 20-26 of Orito) to vary between first (column 5, lines 58-62 of Orito), second (column 5, lines 52-55 of Orito) and third (column 5, lines 55-58 of Orito) reference

voltages based on a current mode of an image scanner (column 5, lines 52-62 of Orito), the first reference voltage selected for a background removal function (column 5, lines 58-62 and column 9, lines 39-45 of Orito), and one of the second and third reference voltages being selected when the background removal function is not used (column 5, lines 52-58 of Orito). Three separate reference levels are selected between. A first reference level is for reading image data (column 5, lines 58-62 of Orito), which includes the function of background removal (column 9, lines 39-45 of Orito). By subtracting the black average values from the image data (GD(n)-B(n)) (column 9, lines 39-45 of Orito), the background level is removed. If image data is not read, then either white level data or black level data are determined (column 5, lines 52-58 of Orito). Since all image data read by the photoelectric device are specifically converted to voltages (column 6, lines 20-26 of Orito), the first, second and third reference levels are reference voltages. Furthermore, since the white level data and black level data are determined without respect to background removal (column 7, lines 50-58 and column 8, lines 5-11 of Orito), different reference voltages are used for white level data reading, black level data reading, and image data reading.

Orito further discloses a detecting part (figure 5(70 (portion)) of Orito) detecting a black correction reference data from an output signal for each pixel of said photoelectric device (column 8, lines 5-11 of Orito); a black shading correcting part (figure 5(70(portion)) of Orito) subtracting the black correction reference data (B(n)) from digital image data (GD(n)) obtained from the output signal for each pixel of said photoelectric device when an image is read (column 9, lines 39-45 of

Orito), through said A-D converter having the reference level set therein (column 6, lines 20-26 of Orito); and a correcting part (figure 5(70(portion)) of Orito) correcting the black correction reference data by a relation of a first digital black level value (1BA*n*) obtained from an output voltage level of said empty transfer part output generating part (column 5, lines 52-58 of Orito) obtained through said A-D converter (column 6, lines 20-26 of Orito) when the black correction reference data is detected (column 8, line 64 to column 9, line 7 of Orito) and a second digital black level value (2BA*n*) obtained from an output voltage level of said empty transfer part output generating part (column 5, lines 52-58 of Orito) obtained through said A-D converter (column 6, lines 20-26 of Orito) also when said black correction reference is detected (column 8, line 64 to column 9, line 7 of Orito).

Orito teaches that a control unit (figure 5(70) of Orito) is used to control the scanner (column 5, line 65 to column 6, line 5 of Orito). Thus, the empty transfer part output generating part, reference voltage varying part, detecting part, black shading correcting part, and correcting part are the portions of the physically-embodied software, executed by the CPU (figure 5(71) of Orito) which forms a portion of the control unit, which perform the functions of the empty transfer part output generating part, reference voltage varying part, detecting part, black shading correcting part, and correcting part, respectively.

Orito does not disclose expressly that said relation of said first digital black level value and said second digital black level value is a ratio; and that said second digital black level value is obtained when the image is read.

Arimoto discloses correcting reference data (Wave') by a ratio (column 9, lines 21-25 of Arimoto) of a first digital level (Pave) obtained when the reference data is detected (column 7, lines 8-12 of Arimoto) and a second digital level (Wave) obtained when the image is read (column 7, lines 4-7 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of background and black level reference data in digital image scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use a ratio as the relation of two digital level values, wherein the second one is taken from data obtained during an image read operation, as taught by Arimoto, wherein the two digital level values are the first digital black level and the second digital black level taught by Orito. The motivation for doing so would have been that the originally installed reference regions deteriorate over time (column 2, lines 13-21 of Arimoto), and applying the correction taught by Arimoto eliminates this problem and allows for convenient automatic compensation for density changes in the reference level producing regions (column 2, lines 24-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 2 and 12.

Regarding claims 5 and 15: Orito discloses a first adding circuit (figure 5(70(portion)) of Orito) calculating a sum of output levels of said empty transfer part for predetermined pixels (1BA1...1BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito); and a second adding circuit calculating a sum of

output levels of said empty transfer part for the predetermined pixels (2BA1...2BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito). The calculation of an average inherently requires the calculation of a sum. Pixels 1BA1 to 1BA8 are separate pixels since pixels 1BA1 to 1BA8 are read during separate scanning operations (column 8, lines 1-3 of Orito), and thus comprise separate pixel data (column 8, lines 13-15 of Orito).

Orito does not disclose expressly that the output levels used by said second adding circuit are obtained when the image is read; a multiplying circuit multiplying the sum output from the second adding circuit with the black correction reference data; and a dividing circuit dividing the result of multiplication output from said multiplying circuit by the sum output from said first adding circuit, and outputting the result of the division as the black correction reference data after the correction.

Arimoto discloses a multiplying circuit multiplying a second reference level (Pave') obtained when the image is read (column 8, line 67 to column 9, line 5 of Arimoto) with correction reference data (Wave) (column 9, lines 21-25 of Arimoto); and a dividing circuit dividing the result of multiplication output from said multiplying circuit by a first reference level (Pave) (column 9, lines 21-25 of Arimoto), and outputting the result of the division as the correction reference data after the correction (Wave') (column 9, lines 21-25 of Arimoto). Since multiplying and dividing are performed in Arimoto, some form of multiplying circuit and dividing circuit, such as digital logic circuitry or computer-readable memory used to physically embody specific routines, are inherent.

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of background and black level reference data in digital image scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use the correction ratio taught by Arimoto, for the black correction reference taught by Orito. The motivation for doing so would have been that the originally installed reference regions deteriorate over time (column 2, lines 13-21 of Arimoto), and applying the correction taught by Arimoto eliminates this problem and allows for convenient automatic compensation for density changes in the reference level producing regions (column 2, lines 24-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 5 and 15.

Regarding claims 6 and 16: Orito discloses a first adding circuit (figure 5(70(portion)) of Orito) calculating a sum of false output levels of said empty transfer part from said empty transfer part output generating part for predetermined pixels (1BA1...1BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito); and a second adding circuit calculating a sum of false output levels of said empty transfer part from said empty transfer part output generating part for the predetermined pixels (2BA1... 2BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito). The calculation of an average inherently requires the calculation of a sum. Pixels 1BA1 to 1BA8 are separate pixels since pixels 1BA1 to 1BA8 are read during separate scanning operations

(column 8, lines 1-3 of Orito), and thus comprise separate pixel data (column 8, lines 13-15 of Orito).

Orito does not disclose expressly that the output levels used by said second adding circuit are obtained when the image is read; a multiplying circuit multiplying the sum output from the second adding circuit with the black correction reference data; and a dividing circuit dividing the result of multiplication output from said multiplying circuit by the sum output from said first adding circuit, and outputting the result of the division as the black correction reference data after the correction.

Arimoto discloses a multiplying circuit multiplying a second reference level (Pave') obtained when the image is read (column 8, line 67 to column 9, line 5 of Arimoto) with correction reference data (Wave) (column 9, lines 21-25 of Arimoto); and a dividing circuit dividing the result of multiplication output from said multiplying circuit by a first reference level (Pave) (column 9, lines 21-25 of Arimoto), and outputting the result of the division as the correction reference data after the correction (Wave') (column 9, lines 21-25 of Arimoto). Since multiplying and dividing are performed in Arimoto, some form of multiplying circuit and dividing circuit, such as digital logic circuitry or computer-readable memory used to physically embody specific routines, are inherent.

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of background and black level reference data in digital image scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use the correction ratio taught by Arimoto, for the black correction reference

taught by Orito. The motivation for doing so would have been that the originally installed reference regions deteriorate over time (column 2, lines 13-21 of Arimoto), and applying the correction taught by Arimoto eliminates this problem and allows for convenient automatic compensation for density changes in the reference level producing regions (column 2, lines 24-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 6 and 16.

Regarding claims 7 and 17: Orito discloses a first adding circuit (figure 5(70(portion)) of Orito) calculating a sum of output levels of said empty transfer part for predetermined pixels (1BA1...1BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito); and a second adding circuit calculating a sum of output levels of said empty transfer part for the predetermined pixels (2BA1...2BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito). The calculation of an average inherently requires the calculation of a sum. Pixels 1BA1 to 1BA8 are separate pixels since pixels 1BA1 to 1BA8 are read during separate scanning operations (column 8, lines 1-3 of Orito), and thus comprise separate pixel data (column 8, lines 13-15 of Orito).

Orito does not disclose expressly that the output levels used by said second adding circuit are obtained when the image is read; and a microcomputer multiplying the sum output from the second adding circuit with the black correction reference data and dividing the result of multiplication output from said multiplying circuit by the sum output from said first adding

circuit, and outputting the result of the division as the black correction reference data after the correction.

Arimoto discloses a microcomputer (figure 1(106); and column 8, lines 34-35 and lines 59-62 of Arimoto) multiplying a second reference level (Pave') obtained when the image is read (column 8, line 67 to column 9, line 5 of Arimoto) with correction reference data (Wave) (column 9, lines 21-25 of Arimoto) and dividing the result of multiplication output from said multiplying circuit by a first reference level (Pave) (column 9, lines 21-25 of Arimoto), and outputting the result of the division as the correction reference data after the correction (Wave') (column 9, lines 21-25 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of background and black level reference data in digital image scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use the correction ratio taught by Arimoto, for the black correction reference taught by Orito. The motivation for doing so would have been that the originally installed reference regions deteriorate over time (column 2, lines 13-21 of Arimoto), and applying the correction taught by Arimoto eliminates this problem and allows for convenient automatic compensation for density changes in the reference level producing regions (column 2, lines 24-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 7 and 17.

Regarding claims 8 and 18: Orito discloses a first adding circuit (figure 5(70(portion)) of Orito) calculating a sum of false output levels of said empty transfer part from said empty

transfer part output generating part for predetermined pixels (1BA1...1BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito); and a second adding circuit calculating a sum of false output levels of said empty transfer part from said empty transfer part output generating part for the predetermined pixels (2BA1... 2BA8) obtained when the black correction reference data is detected (column 8, line 62 to column 9, line 3 of Orito). The calculation of an average inherently requires the calculation of a sum. Pixels 1BA1 to 1BA8 are separate pixels since pixels 1BA1 to 1BA8 are read during separate scanning operations (column 8, lines 1-3 of Orito), and thus comprise separate pixel data (column 8, lines 13-15 of Orito).

Orito does not disclose expressly that the output levels used by said second adding circuit are obtained when the image is read; and a microcomputer multiplying the sum output from the second adding circuit with the black correction reference data and dividing the result of multiplication output from said multiplying circuit by the sum output from said first adding circuit, and outputting the result of the division as the black correction reference data after the correction.

Arimoto discloses a microcomputer (figure 1(106); and column 8, lines 34-35 and lines 59-62 of Arimoto) multiplying a second reference level (Pave') obtained when the image is read (column 8, line 67 to column 9, line 5 of Arimoto) with correction reference data (Wave) (column 9, lines 21-25 of Arimoto) and dividing the result of multiplication output from said multiplying circuit by a first reference level (Pave) (column 9, lines 21-25 of Arimoto), and outputting the result of

the division as the correction reference data after the correction (Wave') (column 9, lines 21-25 of Arimoto).

Orito and Arimoto are combinable because they are from the same field of endeavor, namely the correction of background and black level reference data in digital image scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to specifically use the correction ratio taught by Arimoto, for the black correction reference taught by Orito. The motivation for doing so would have been that the originally installed reference regions deteriorate over time (column 2, lines 13-21 of Arimoto), and applying the correction taught by Arimoto eliminates this problem and allows for convenient automatic compensation for density changes in the reference level producing regions (column 2, lines 24-29 of Arimoto). Therefore, it would have been obvious to combine Arimoto with Orito to obtain the invention as specified in claims 8 and 18.

4. Claims 3-4 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US Patent 5,371,613) and Barron (US Patent 5,659,355).

Regarding claims 3, 4, 13 and 14: Orito discloses that said photoelectric device comprises a contact-type sensor (column 5, lines 51-55 of Orito) which receives reflected light from an original through an optical system (column 5, lines 41-48 of Orito). The plurality of individual Charge Couple Devices (column 5, lines 51-55 of Orito) comprise the portion of the CCD sensor that directly receives the reflected light (column 5, lines 41-48 of Orito).

Orito in view of Arimoto does not disclose expressly that said contact-type sensor and said optical system are both unity magnification.

Barron discloses that the closed-loop gain of the entire imaging system (figure 2 of Barron) should be set at exactly a unity gain (column 3, lines 24-29 of Barron).

Orito in view of Arimoto is combinable with Barron because they are from the same field of endeavor, namely digital image data processing and correction for digital image data scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to maintain a unity gain, as taught by Barron, by ensuring that the contact-type sensor and the optical system taught by Orito are kept at a unity gain. The motivation for doing so would have been that a unity gain is necessary to calibrate the system (column 3, lines 24-27 and lines 34-38 of Barron). Therefore, it would have been obvious to combine Barron with Orito in view of Arimoto to obtain the invention as specified in claims 3, 4, 13 and 14.

5. Claims 9-10 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orito (US Patent 6,072,912) in view of Arimoto (US Patent 5,371,613) and Shigeeda (US Patent 5,900,948).

Regarding claims 9 and 19: The arguments regarding claims 1 and 11 are incorporated herein.

Orito in view of Arimoto does not disclose expressly an image forming device forming an image on a sheet based on the image data read by said image reading device.

Shigeeda discloses an image forming device (figure 1(15) of Shigeeda) forming an image on a sheet based on the image data

read by an image reading device (column 6, lines 33-35 of Shigeeda).

Orito in view of Arimoto is combinable with Shigeeda because they are from the same field of endeavor, namely digital image data processing for digital image data scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the resultant image data processed by the device of Orito in view of Arimoto to an image forming device, as taught by Shigeeda. The motivation for doing so would have been that said image forming device provides a hard copy of the processed image (column 7, lines 1-4 of Shigeeda). Therefore, it would have been obvious to combine Shigeeda with Orito in view of Arimoto to obtain the invention as specified in claims 9 and 19.

Regarding claims 10 and 20: The arguments regarding claims 2 and 12 are incorporated herein.

Orito in view of Arimoto does not disclose expressly an image forming device forming an image on a sheet based on the image data read by said image reading device.

Shigeeda discloses an image forming device (figure 1(15) of Shigeeda) forming an image on a sheet based on the image data read by an image reading device (column 6, lines 33-35 of Shigeeda).

Orito in view of Arimoto is combinable with Shigeeda because they are from the same field of endeavor, namely digital image data processing for digital image data scanners. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to output the resultant image data processed by the device of Orito in view of Arimoto to an image forming device, as taught by Shigeeda. The motivation for doing

so would have been that said image forming device provides a hard copy of the processed image (column 7, lines 1-4 of Shigeeda). Therefore, it would have been obvious to combine Shigeeda with Orito in view of Arimoto to obtain the invention as specified in claims 10 and 20.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Irie et al, US Patent 5,644,409, 01 July 1997.

b. Keiko Kanamori, US Patent 6,028,958, 22 February 2000.

c. Tse et al, US Patent 6,198,845 B1, 06 March 2001.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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